

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph beginning at page 10, line 23 and ending at page 11, line 14 with the following amended paragraph:

The typical feed to the subject process is a mixture of many different hydrocarbons and coboiling compounds recovered by fractional distillation from a crude petroleum. It will normally have a boiling point range starting above about 340°C (650°F) and ending below about 482°C (900°F). Such a petroleum derived feed may be a blend of streams produced in a refinery such as coker gas oil, straight run gas oil, deasphalted gas oil and vacuum gas oil. Alternatively it can be a single fraction such as a heavy vacuum gas oil. Synthetic hydrocarbon mixtures such as recovered from shale oil or coal can also be processed in the subject process. The feed may be subjected to hydrotreating or treated as by solvent extraction prior to being passed into the subject process to remove gross amounts of sulfur, nitrogen or other contaminants such as asphaltenes. The subject process is expected to convert a large portion of the feed to more volatile hydrocarbons such as naphtha and diesel boiling range hydrocarbons. Typical conversion rates vary between about 50 and 90 vol. percent depending greatly on the feed composition. The effluent of the process will actually contain a broad variety of hydrocarbons ranging from methane to essentially unchanged feed hydrocarbons boiling above the boiling range of any desired product. The hydrocarbons boiling above the boiling point of any desired product are referred to as unconverted products even if their boiling point has been reduced to some extent in the process. Most unconverted hydrocarbons are recycled to the reaction zone with a small percentage e.g. 5 vol. percent being removed as a drag stream.

Please replace the paragraph beginning at page 11, line 15 and ending at page 12, line 6 with the following amended paragraph:

The subject catalyst can be employed in what are referred to in the art as single stage and two stage process flows, with or without prior hydrotreating. These terms are used as defined and illustrated in the text *Hydrocracking Science and Technology* by J. Scherzer and A.J. Gracia, 1996, Marcel Dekker Inc., ISBN 0-8247-9760-4. In a two-stage process the subject catalyst can be employed in either the first or second stage. The catalyst may be preceded by a hydrotreating catalyst in a separate reactor or may be loaded into the same reactor as a hydrotreating catalyst or a different hydrocracking catalyst. An upstream hydrotreating catalyst can be employed as feed pretreatment step or to hydrotreat recycled unconverted materials. The hydrotreating catalyst can be employed for the specific purpose of hydrotreating poly nuclear aromatic (PNA) compounds to promote their conversion in subsequent hydrocracking catalyst bed(s). The subject catalyst can also be employed in combination with a second, different catalyst, such as a catalyst based upon Y zeolite or having primarily amorphous cracking components. It is preferred that the catalyst is employed with a feed or in a configuration that the feed passing through the catalyst is a raw feed or resembles a raw feed. The sulfur content of crude oil, and hence the feed to this process, varies greatly [[with]] depending on its source. As used herein, a raw feed is intended to refer to a feed which has not been hydrotreated or which still contains organic sulfur compounds which result in a sulfur level above 1000 mol ppm.

Please replace the paragraph at page 18, lines 1-18 with the following amended paragraph:

Based upon the data provided by the tests it appears that the catalyst should contain a beta zeolite having a unit cell size parameter "c" between about 26.10 to about 26.20 and have less than about 17 percent of the framework aluminum characterized by NMR as tetrahedral aluminum. The range of the number of observed tetrahedral aluminum in the zeolite framework of the treated beta zeolite can range from about 10 to about 15%. It is preferred that the treated beta zeolite has a Brönsted 150°C [[acid cite]] acidity value less than about 0.05 Au/mg, and more preferably between 0.02 and about 0.05. Further, it is preferred that the treated beta zeolite has a Lewis pyridine adsorption value at 150°C between about 0.04 and 0.08 Au/mg. It is further preferred that the Brönsted pyridine adsorption value at 300°C of the treated zeolite is less than 0.02 Au/mg and preferably between about 0.008 and about 0.02. The Brönsted pyridine IR adsorption value of the zeolite at 450°C is preferably less than 0.005 Au/mg. The Lewis 300°C acidity of the treated zeolite should be less than about 0.05 Au/mg and is preferably between 0.02 and 0.05 Au/mg. Finally, the SF<sub>6</sub> adsorption capacity of the treated beta zeolite should be below about 17 wt. %, and is preferably between about 9 and 16 wt. %.

Please replace the paragraph at page 21, lines 7-19 with the following amended paragraph:

One process embodiment of the invention may accordingly be characterized as a hydrocracking process which comprises contacting a feed stream comprising hydrocarbons having boiling points between about 340°C and about 540°C with a catalyst comprising at least 40 wt % silica-alumina and from 0.5 to about 20 wt % beta zeolite as [an] active cracking components, which beta zeolite has been treated by steaming at temperatures between about 750 and 925°C and which beta zeolite is further characterized by a unit cell size parameter "c" value of 26.10 to 26.20, the beta zeolite having between 1 to 15 percent tetrahedral aluminum by NMR and an acidity distribution characterized by Brönsted pyridine IR adsorption values of less than 0.05 mg/cc at 150°C and less than 0.02 mg/cc at 300°C, a Brönsted pyridine IR adsorption value [of] at 450°C of less than 0.005 Au/mg and less than 2% of the value of the corresponding untreated beta zeolite.